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NORTHERN PLANT NOVELTIES FOR 1939

Department of Horticulture, Experiment Station, South Dakota State College
Brookings, South Dakota, February 20, 1939

This department does not conduct a commercial nursery, but propagates and distributes new varieties originated in this department or imported from similar climates of the Old World. Many acres of seedling fruits have been grown since the work was started in 1895. The improvement in size and quality of each plant generation is greater year by year. Hybridization and selection are the main methods of improvement. The work has been honored by four medals awarded to Dr. N. E. Hansen and by extensive propagation and planting of many of the new varieties. The medals are: The George Robert White gold medal of honor for "eminent service in horticulture" by the Massachusetts Horticultural Society, 1917; the Marshall P. Wilder silver medal by the American Pomological Society for new fruits, 1929; gold medal for public service by Cosmopolitan club, Sioux Falls, 1933; A. P. Stevenson gold medal for new fruits by the Manitoba Horticultural Society, 1935.

A host of new seedling fruits and roses are coming on, which will be sent out as soon as they are deemed to be up to standard.

Some of the material in this list is offered for distribution to plant breeders to help in the work of improving hardy fruits and roses elsewhere.

Terms: The money received from the sale of plants makes it possible to do the work on a larger scale than would otherwise be possible. Those who have followed the progress of the work for many years know the importance of ordering promptly, as soon as this list is received, as the supply of plants is limited. Terms are cash with order. No credit except to the Government Experiment Stations. For South Dakota orders add three per cent to the above prices for State Retail Sales Tax.

Northern Novelties in Fruits and Roses

The following new introductions by Dr. N. E. Hansen, Emeritus Professor of Horticulture, are worthy additions to his long list of hardy fruits and roses:

Fruits Already Introduced: Scions of new fruits listed in earlier lists will be supplied as far as available at 50 cents per foot.

Four New Hardy Blight-resistant Pears

Yermak Pear - Offered for the first time. A remarkable tree. In this pear hardiness and resistance to blight is combined with excellent quality. Pedigree: Sechel x East Siberian pear (Pyrus Ussuriensis) pollen. In the fruit, the Seckel, the highest in quality of all pears grown in America, contributes superb quality; and in tree the Siberian pear gives extreme hardiness. Resistance to fireblight comes from both parents. Upon the original tree, much crowded in the seedling rows, the fruit is not large, about the same as Seckel, the seed parent. Season, early October. (Yermak, the Cossack conqueror of Siberia about 400 years ago). Only scions available, per foot $1.00.

Finsib Pear - Offered for the first time. Pedigree: Finland Early Yellow x Saponsky. The Finland Yellow Early pear was brought from Russia. The Saponsky is Pyrus Ussuriensis of East Siberia. The Finsib pear is 2 x 2 inches, globular, acute pyriform, yellow with minute russet dots. Stem long, up to 2½ inches. Flesh juicy, melting; quality excellent. (Name from Finland, Siberia). Only scions available, per foot, $1.00.

Tanya Pear - Offered for the first time. A red late-keeping pear of medium size and good quality. Pedigree: Ideal x East Siberian (Pyrus Ussuriensis) pear pollen. Hardy, blight-resistant. First exhibited at the State Fair, Huron, South Dakota, 1938. Only scions available, per foot, $1.00.

Selenga Pear - Offered for the first time. Pedigree: Saponsky (East Siberian Pyrus Ussuriensis) x White Doyenne pear pollen. Fruit oblong pyriform, 1 3/4 inches across, 2½ inches deep, yellow with minute russet dots, quality excellent, season October. Tree productive and blight-resistant. (Selenga, a river in East Siberia). Only scions available, per foot, $1.00.

Taming the Native American Apple

This work is making steady progress. The size of the fruit in the new seedlings increases year by year. The largest the past year was Watopa, 2 7/8 inches across; the pedigree is Elk River, Minnesota x Jonathan apple pollen; in the fruit there is much red color over the green; evidently the Jonathan contributes both size and color.

These hybrids are evidently a new fruit, one that can be frozen solid outdoors all winter, and can be thawed out at any time and cooked. Most or all of the native acerbity is removed by the freezing. The tests this winter confirm the preliminary tests of last winter. The idea is not new as the Indians centuries ago cached or buried the wild crabs in the earth all winter. This was the only apple the Indians knew before the white man came. These tests are still in progress.

Wiyuta Crabapple - Offered for the first time. Pedigree: Nevis, Minnesota wild crab (Pyrus Ioensis) x Wolf River apple pollen. This is of the same pedigree as Wetonka, Wahoya and Wakaga described in previous lists. Fruit 2½ inches across; 2 inches deep, round, slightly truncated, regular; much shaded and marbled red over greenish yellow, cavity (stem end) with much green out over base. A great improvement, when cooked, over the Nevis wild crab. Season evidently all winter and spring. Fruits of Wetonka after freezing solid until late in January this year, when cooked had lost the acerbity and were of neutral quality. These four very productive wild crab hybrids are worthy of further development. Scions only available, per foot, $1.00.

Watopa Crabapple - Offered for the first time. Pedigree: Elk River, Minnesota, wild crab x Jonathan apple pollen. A sister to Wamdesa introduced last year, but larger, the fruits in 1938 being 2 7/8 inches across. Fruit regular, round, truncated, greenish yellow with much thinly washed and striped red over green and much green out over base (stem end); skin unctuous; basin, smooth, abrupt, calyx segmonts very small, closed. An all-the-year keeper. Tree very productive. Flavor mildly acid to neutral in the cooked fruit. Scions only, per foot, $1.00.

Wotanda Crabapple - Offered for the first time. The largest of several seedlings of the same pedigree: Nevis, northwest Minnesota, wild crab x Northwestern Greening apple pollen. Fruit 2½ x 2 inches. Very regular, oblate, unctous, yellowish green. Calyx segments very small, closed. Fruit an all-the-year keeper; heavy for its size, one fruit weighed, a little over four ounces. When cooked, the flavor is mild, not acerb. Tree productive. Only scions available, per foot, $1.00.

Apples: Triploid and Tetraploid

Hansen's Kola crabapple, the first tetraploid (with 68 chromosomes, double the usual diploid number), continues to attract attention in several countries. He has many more. They offer a chance to originate many triploid apples (51 chromosomes). Recent cytological study in Sweden and England indicates triploid apples contain more vitamins than ordinary apples. He is also getting entirely new types of apples of great value for the open prairie; smaller in tree, but with good fruit that will keep a year; also heavy annual bearers.

Progress in Apples

Many new seedling apples fruited the past season. About 6,000 hybrid apple seedlings are ready for spring planting to be fruited as soon as possible. For several years much of this work was done in the orchard of the late John Robertson at Hot Springs. Mr. Robertson was glad to cooperate without charge to the State College. Some tours were made to southern states to obtain pollen.

North and South Travel: Dr. Hansen decided to do more of this travel, to work north with the apple blossoms. This is an extension of the movable-tub orchard method that he began in 1897 and which has been widely adopted in the United States and foreign countries. It makes combinations possible not otherwise possible. Early in the spring of 1937, he began work in Arkansas and worked north with the apple blossoms through Missouri, Iowa and Nebraska; Hot Springs, Sioux Falls, Brookings and Watertown, South Dakota, clear north to Morden and Winnipeg, Manitoba. In the autumn, he went to Manitoba to gather the fruits. Thousands of flowers were cross-pollinated and much hybridized seed was obtained. In 1938, the tour began at Mountain Grove in southern Missouri and extended to Morden and Winnipeg, Manitoba. In the fall, he went to Manitoba again to gather the fruits.

Perfumed Plums

In originating the first hybrids of our native plum (Prunus Americana) with the Chinese apricot-plum Prunus Simoni, there were 16 seedlings. Of these, Kaga, Hanska, Toka, and Inkpa were named and distributed. Tokata, the reciprocal hybrid, was also sent out and by many is regarded as the finest of all in its superb flavor. Kaga, Toka, and Hanska are now widely grown in many states for the excellent flavor of the firm perfumed flesh. In Minnesota, Kaga is found to be an excellent pollenizer for other plums.

There is another of these 16 original seedlings worthy of introduction because of its larger size, and it is now named the Kota. The tree is very productive. It made a splendid record in the State Orchard at Sioux Falls in 1938.

Kota Plum - Offered for the first time. A sister to Kaga, Toka, and Hanska, but the fruit averages larger. Fruit 1 3/4 inches across, 1½ inches deep, a vivid dark red with large distinct yellow dots and white bloom; oblate, with slightly sunken apex; suture very wide and shallow; cavity deep, regular, acute; stem stout. Flesh very firm, richly fragrant and delicious. In general, the multitude of large yellow dots is a distinguishing characteristic. Scions, per foot $1.00

Oacoma - A Delicious New Native Plum

First introduced spring 1938. Fruit red, round, 1 3/8 inches across, of very best quality eaten fresh or as preserves. Skin thin, dissolves in cooking. The pit is rather small, round, flattened with smooth rounded edges and no sharp points. The high quality of this pure native South Dakota plum should quickly make it a general favorite. The tree is perfectly hardy and a heavy bearer. The original tree of Oacoma was found a few miles west of Oacoma in Lyman County and was first sent out as South Dakota No. 12 in 1934. This is now named Oacoma. No matter how many hybrid plums are introduced, some of the northern pure native plums should be in every orchard to provide abundant pollination of the blossoms. Many people like the stronger flavor of the native plum, especially for preserves and jam. One-year grafted trees of Oacoma plum, each $1.00

Note: A ten-year test in the State Orchard at Watertown, on a hill, without protection, demonstrated very clearly that native South Dakota plums were much hardier than native plums from further South.

Twelve Hardy Apricots

These apricots were grown from native seed that Dr. Hansen gathered in the Harbin region of North China, a region with -50° Fahrenheit winter cold. These 12 Manchurian apricots were widely distributed, literally from coast to coast, and are in extensive propagation by many nurserymen. There is a vast market open to good hardy apricots. There are only 7 trees available of the Sing, which are reserved to make up complete sets. Of the other 11 varieties, one year trees, buds or grafts on native plum stock, are available at one dollar each. Order as early as possible to get the varieties you want, or leave the choice to us.

For the convenience of the reader, the following descriptions of these apricots is reprinted from S. D. Bulletin 309 which is sent free to applicants. These original trees again bore a heavy crop in 1938.

Twelve Named Varieties of the Manchu Apricots

Manchu - Large yellow fruit; heavy crop. Fresh fruit No. 1 in size and quality. Cooking test: cooks up into pale yellow good quality sauce. Apparently the largest fruit in this lot of seedlings. The name Manchu apricot is now reserved for it.

Mandarin - Fruit large, rich yellow color; one of the best in quality, fresh or when cooked.

Chow - Tree productive; fruit large, good eating. Cooking test: pale yellow sauce of good quality.

Sing - (Chinese for apricot.) Tree productive, fruit large. Cooking test: good rich orange yellow sauce, flavor stronger than some of the others.

Ninguta - Fruit large yellow with red blush. Crop very heavy. Season late, first week in August. Fresh fruit very mild, one of the mildest and best.

Tola - Large, freestone. Makes excellent quality sauce. 1935 crop very heavy. One of the best. Season early. August 1935.

Anda - Tree productive, freestone of good size. Season late. In cooking, stays firm and does not cook up. One of the very best in quality.

Zun - Quality of fruit, nearly excellent. Pit small, round freestone.

Sino - Heavy crop, fruit small, on 8 foot crowded tree. Cooking test: excellent flavor.

Lalin - Fruit large, yellow with red bush. Fresh fruit good quality. Tree, a heavy crop. No cooking test. Season early.

Hulan - Very heavy crop of large fruit. Season early. Cooking test: makes good flavored sauce.

Sansin - Heavy crop of large fruit. Fresh fruit of excellent quality, making a rich orange-yellow sauce.

[illegible] - A [illegible] [illegible]

First introduced spring 1958. [illegible]
best quality eater fruit or cooking [illegible]
is rather small, round, flattened with smooth [illegible]
high quality of fruit for native South [illegible]
favorite. The tree is perfectly hardy [illegible]
Second was found after [illegible]
as South Dakota No. 1a in 1974. [illegible]
plums are introduced, some of them [illegible]
orchard to provide maximum pollination [illegible]
stronger flavor of the native plum, [illegible]
grafted trees of Chickasaw plum, [illegible]
Note: Auto-pollination in the Stone [illegible]
ion, demonstrates very clearly [illegible]
native plums from Indian Creek.

Twelve Best Apples

These varieties were grown from [illegible]
Hardin region of Montana, [illegible]
Manchurian apricots were also [illegible]
in extensive propagation [illegible]
hardy apricots. There are only [illegible]
make up complete [illegible]
native plum stock, are available [illegible]
get the varieties you want, or leave the [illegible]

For the convenience of [illegible]
is reprinted from C. D. Bulletin 203 which is [illegible]
trees again bore heavy crop in 1978.

Twelve Hardy Varieties of the Hardin Area

Maidun - Large yellow fruit, [illegible]
Cooking type; cooked up like pale yellow [illegible]
fruit in this lot of seedlings. [illegible]

Mandarin - Fruit large, rich yellow [illegible]
or when cooked.

Chow - Tree productive, fruit large, [illegible] Cooking type
sauce of good quality.

Sing - (Chinese for apricot.) [illegible]
good rich orange yellow [illegible] flavor strong [illegible]

Hungry - Fruit large [illegible]
first week in August. [illegible]

Tola - Large, [illegible]
heavy. [illegible]

Ando - Tree productive, [illegible]
firm [illegible]

Zum - Quality of fruit, [illegible]

Siro - Heavy crop, fruit small, [illegible]
excellent flavor.

Lylin - Fruit large, yellow with [illegible]
heavy crop [illegible]

Hulan - Very heavy crop of large fruit. [illegible]
good flavored sauce.

Scarlin - Heavy crop of large fruit. [illegible]
rich orange-yellow sauce.

The Hansen Bush Cherry

This is the result of over 40 years of selection of the Sandcherry, (Prunus Besseyi), a favorite fruit of the Indians in western South Dakota. We are now well along on the second million seedlings. In the present plantation of 35 acres in the state orchard at Watertown, Dr. Hansen found in 1938 a lot of large choice seedlings, including some of a new, attractive red color and many with good, golden yellow fruit. The quality of the fruit improves each plant generation, and the size of the pit decreases. This seed will produce the fourteenth generation. In the later selections, the size of the pit has been decreased greatly, the size of the fruit increased, and the quality improved. All of them make a sauce of good quality. In the 1937 list, nine of these Hansen Bush cherries were named and distributed. Descriptions of these may be found in S. D. Bulletin 309. Price: one year seedlings of the latest selections, 3 for $1.00.

A Note on Selection

For rapid progress it is necessary to select from immense numbers. In a seed-farm in Europe, Dr. Hansen saw eighty acres of China Asters in full bloom; every single plant was carefully examined and those not up to the standard were destroyed. At rare intervals stakes were set around an individual plant. This was something entirely new, to be saved separately for further development.

This immense number made him determine not to experiment with Asters because that field was so thoroughly occupied, but to use the principle of large numbers in working with South Dakota Sandcherries and other native fruits. At least 100,000 of each plant generation is his plan and hope.

Progress With Hardy Roses

The State Rose Garden is located at Sioux Falls. There and at Brookings some 20 acres are devoted to originating roses that will be hardy without winter protection, also, to originating hardy thornless rose stocks. The Rose Annual of the American Rose Society with several thousand members in America and many foreign lands, published the fact that South Dakota is the first state in the union to have a State Rose Garden.

The progress in Hardy Roses at this station was recognized June 29, 1936, at the annual meeting of the American Rose Society at Des Moines, Iowa, in awarding First Prize to N. E. Hansen for 41 new seedlings. The leading rose in this collection has been named Lillian Gibson.

Much hybridized rose seed was harvested from the breeding experiments in 1938. The rose-breeding experiments are carried on with a Federal appropriation; the land is furnished by the state. The nurserymen of America with 13 million roses to bud annually would like hardy smooth-wooded stocks. To originate such stocks is also a part of the work.

Four new roses were offered in the 1938 list for the first time. These were budded last fall to be ready for distribution the fall of 1939.

100% Thornless Roses

In clearing twenty acres of rose seedlings in 1932 in the State Rose Garden at Sioux Falls and at State College, a few 100 per cent thornless rose plants were selected for further work. Both leaves and wood are smooth. These were intorduced in 1936. The flowers are single, pink, fragrant. The abundant red rose-hips in autum and winter are noteworthy. These plants are of sturdy upright habit and are now being crossed with many large double-flowered varieties in other colors. In their present condition they are pleasing ornamental shrubs that will endure 50 below zero Fahrenheit without protection, and which may be found useful by the rose-breeders in eliminating thorns.

It is a pleasure to report further progress with the 100% Thornless Roses noted in S. D. Bulletin No. 309. The flowers are single and pink. In 1937 out of 11,053 seedlings of these 100% thornless roses, 613 seedlings or about 5½%, were entirely smooth even the first year from seed. The hope is to make this character come true to seed and that it will be a dominant homozygote in hybridization with standard double roses.

Strong plants of the 100% thornless roses noted in S. D. Bulletin 309, each $1.00.

Progress in Hardy Double Thornless Roses

Dr. Hansen's experience with many thousands of rose seedlings shows it to be fairly easy to get the thorns off of the wood, but very difficult to get the bristles from the rachis or midrib of the leaf. Evidently these are two quite different problems.

The three Pax Roses are only a beginning. Pax is the Latin for peace. Thorns are not necessary in Roses. These Pax Roses are nearly thornless. Eventually Pax may be declared in the Rose gardens of the world!

In the spring of 1938 plants of four new roses were sent out for the first time: Lillian Gibson, and three smooth-wooded varieties: Pax Amanda, Pax Apollo, Pax Iola. They were all root-sprouts from the original plants. No sprouts are available for this spring, 1939, but they were budded on hardy stocks last August and these should be ready for spring 1940.

The following descriptions are from last year's spring list:

Lillian Gibson Rose - Pedigree: Wild rose, Rosa blanda, from Wilton, northern Minnesota x Red Star (a red Hybrid Tea) pollen. Offered for the first time. This rose was the sensation at the Sioux Falls Flower Show, June, 1937. The flowers are large, double, over 40 petals, a beautiful lively rose pink, about three inches across with delightful rich fragrance. A very abundant bloomer in late June. Plant of strong upright sturdy growth. The plant is sparsely thorny on young shoots, with scattered thorns on the old shoots.

Pax Amanda Rose - Pedigree: Frau Georg Von Simson (a multiflora climber from Europe) x pollen of Rosa blanda, wild rose from Wilton, Minnesota. A gorgeous bloomer, light pink turning to white, semi-double in clusters. Petals about 17. A strong upright grower, with dark brown 7-foot stems. The stems are smooth except a very few thorns near the ground; the midrib of the leaf is bristly.

Pax Apollo Rose - Pedigree: Rosa sempervirens pallida x pollen of Rosa blanda wild rose from southern Manitoba. A wonderful producer of deep pink flowers in large clusters in June. Petals about 14. Tall, upright, 7-foot dark red stems. The wood is smooth; on strong shoots the midrib of the leaf is bristly.

Pax Iola Rose - Pedigree: Anci Bohm (a climbing rose from Europe) x pollen of Rosa blanda, wild rose from Bemidji, north Minnesota. Flowers a semi-double clear shell pink. A strong grower, evidently of the pillar type. The shoots close to the ground also full of bloom. Hundreds of flowers $2\frac{1}{4}$ inches across in large clusters. Petals about 25. The older flowers are nearly white; these two colors make the bush a thing of beauty. The stems of strong growth are all smooth; the rachis or midrib of the leaf is bristly, but a pleasing thornless bouquet can be cut from the side shoots.

Hardy Roses Already Introduced

All on their own roots, so that all the sprouts will be true to name. These are Hansen's earlier introductions. For descriptions and pedigree, see S. D. Bulletin No. 240. Price per plant: $1.00.

Yatkan . . . . . 2 plants

Kitana . . . . . .15 plants

Okaga . . . . . 6 plants

Alika: A Hardy Red Rose - First offered spring, 1930. Color brilliant red with no purple, mauve or violet red in it. It gets far away from the mauve pink of most of our wild prairie roses. Propagates rapidly from sprouts. Dr. Hansen brought this hardy, beautiful, double, fragrant, brilliant red rose from Russia in 1906, under the name Rosa gallica grandiflora. The Alika roses made a gorgeous display in the State Rose Garden at Sioux Falls the past season. Alika roses on own roots, each $1.00. Sprouts from these plants will be true to name.

Mrs. Mina Lindell Rose - Introduced 1927. A beautiful, semi-double light pink wild rose found in Butte County, South Dakota. Plants on own roots, each 50 cents.

Pink Semi Rose - A pink single flower selection of the semi rose from Semipalatinsk, Siberia (Rosa laxa, Retz). It was a pleasure to note at the Federal Horticulture Station at Cheyenne, Wyoming, in 1937, that the Pink Semi rose is very resistant or immune to alkali. This variety should be good for hedges on such soil. Own-rooted plants, each 50 cents.

Collecting Hardy Plants

New material gives new results in plant-breeding. Northern regions contain much that is needed. In seven tours of agricultural explorations by Dr. Hansen to Russia and many tours to Canada, a large amount of material has been collected. In the fall of 1938 Dr. Hansen visited Fort MacMurray in northern Alberta, over 500 miles north of the line. Many new plants were collected, especially small fruits and roses. The winter minimum record for the most northern point reached is 70 degrees below zero, Fahrenheit.

Grapes

From S. D. Bulletin No. 309: "There is a great need for grapes of choice quality that will be hardy without winter protection in South Dakota. Concord and all its descendants will not help us, as they are too short-lived. The Beta and Alpha, which are large fruited selections of the wild grape of Minnesota, are hardy without winter protection, but we need something larger in size and better in quality. In the spring of 1925 I introduced 32 of my new grapes, mostly hybrids of the wild grape collection at Bismarck, North Dakota, and Fort Pierre, South Dakota, with choice eastern grapes, especially with Roger hybrids. The series of dry seasons has delayed the propagation of these new grapes, and the demand for cuttings has taken most of the crop each year.

My own opinion is that these new grapes and their successors along the same line of breeding will eventually revolutionize the grape culture of the prairie Northwest. Our prairie farmers will not lay down and give winter protection to any grape vine. But these new grapes are not intended to go into the milder regions where the Concord and its seedlings are hardy without winter protection. The problem now is to find the best few out of the 32 varieties. Also, there is a problem of whether the market prefers black grapes, white, or red grapes. Some of the choicest quality grapes are not the largest in size."--N. E. Hansen.

The following varieties are available: Atkan, Arikara, Azita, Chonkee, Chontay, Emana, Eona, Lachala, Mandan, Napka, Ree, Shakoka, Siposka, Sonona, Toscha, Wecota. For descriptions, see S. D. Bulletin No. 224.

Price of these grapes, assorted cuttings, our selection, 5 for $1.00.

Collection and Trial

New material gives new possibilities for plant breeding. Much that is needed. In seven years [illegible] Russia and Czechoslovakia [illegible] Canada, [illegible] the fall of 1923 Dr. Hansen visited Fort [illegible] miles north of the Lake. Very few plants [illegible] and roses. The winter min. had reached [illegible] degrees below zero, Fahrenheit.

Results

From S. P. Bulletin No. [illegible] "Many [illegible] quality that will be hardy without [illegible] all the descendants will not necessarily be [illegible] Alpha, which are very hardy [illegible] without winter protection, but [illegible] In the spring of 1923 I [illegible] grape collection of Canada, [illegible] choice eastern grapes, [illegible] delayed the growing of [illegible] most of the crop early."

My own conclusion is that these new [illegible] line of breeding will eventually [illegible] Northwest. Our present Ferment will [illegible] grape vine. But these new grapes are [illegible] the Concord and the Niagaras [illegible] is to find the best [illegible] the market prefers black grapes, white, or [illegible] grapes are not the largest in size." [illegible]

The following varieties are available: [illegible] Lane, Lona, Lucindia, Marden, Hope, Rea, Sunbow, [illegible] For descriptions, see S. P. Bulletin No. 214.

Price of these grapes, assorted cuttings, one collection, 5 for $1.